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MIL-C-12800A (MU)
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SUPERSEDING
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MILITARY SPECIFICATION

CLOTH, ACRYLIC (FOR CARTRIDGE BAGS)

1. SCOPE

1.1 This specification covers acrylic cloth for use in the manufacture of cartridge bags for ammunition (see 6.3).

1.2 Classification.-The acrylic cloth shall be classified as follows:

Class I - 1.2 ounces of acrylic cloth per square yard.
Class II- 2.5 ounces of acrylic cloth per square yard.

2. APPLICABLE DOCUMENTS

2.1 The following documents of the issue in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein.

SPECIFICATIONS

FEDERAL

PPP-P-1134 - Packaging and Packing of Cotton and Cotton - Synthetic Fiber Blend Fabrics (Excluding Duck Fabrics)

STANDARDS

FEDERAL

FED-STD-4 - Glossary of Fabric Imperfections
FED-STD191 - Textile, Test Method

MILITARY

MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes ABC-STD-105)

THIS DOCUMENT CONTAINS 9 PAGES.

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3.2.5 pH of water extract (Class I and Class II).--The pH shall be 7.0 ± 2.0 when tested as specified in 4.4.6.

3.2.6 Acidity or alkalinity (Class I and Class II).--Alkalinity determined as sodium carbonate shall be 0.1 percent max., when tested as specified in 4.4.7. Acidity determined as acetic acid shall be 0.1 percent max., when tested as specified in 4.4.7.

3.2.7 Thread count (number of threads per inch) when tested as specified in 4.4.8 shall be:

- a. Class I warp 70 min.
filling 65 min.
- b. Class II warp 50 min.
filling 50 min.

3.3 Workmanship.--The finished cloth shall be boiled off or scoured to remove sizing materials. The finished cloth shall be fabricated in a thorough, workmanlike manner. It shall be free of weighting materials, surface defects, dirt, oil, grease and other foreign matter. The finished cloth shall be uniformly and closely woven and free of visible imperfections. The finished cloth shall not be bleached.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection.--Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order the supplier may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements. Reference shall be made to MIL-STD-109 to define terms used herein.

4.1.1 Submission of product.--At the time each completed lot of items deliverable under the contract is submitted to the Government for acceptance, the contractor shall supply the following information accompanied by a certificate which attest that the information provided is correct and applicable to the product being submitted:

- a. A statement that the lot complies with all of the quality assurance provisions specified in this specification.



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- b. Specification number and date, together with identification and date of changes thereto.
- c. Certificates of analysis on all materials used directly by the contractor when such material is controlled by Government specifications shall be made available upon request by the Contracting Officer.
- d. Quantity of product in the lot.
- e. Date submitted.

The certificate shall be signed by a responsible agent of the certifying organization. The initial certificate submitted shall be substantiated by evidence of the agent's authority to bind his principal. Substantiation of the agent's authority will not be required with subsequent certificates unless, during the course of the contract, this authority is vested in another agent of the certifying organization.

4.2 First article inspection

4.2.1 Submission.-Prior to the start of regular production the contractor shall submit a first article sample (see 6.1c) to a Government approved facility as designated by the contracting officer for evaluation in accordance with the provisions of 4.2.2. The first article sample shall consist of five(5) yards of material which has been produced by the contractor or furnished by a supplier and which have been manufactured using the same production processes, procedures and equipment which will be used in fulfilling the contract. All parts and material including packaging and packing, shall be obtained from the same source of supply as will be used in regular production. Prior to submission, the contractor shall inspect the sample to the degree necessary to assure that it conforms to the requirements of the contract, and submit a record of this inspection with the sample, including certificates of conformance for materials. A sample containing known defects will not be submitted unless specifically authorized by the contracting officer. A first article sample, or portion thereof, as directed by the contracting officer, shall also be submitted whenever there is a lapse in production for a period in excess of 90 days or whenever a change occurs in manufacturing process, material used, or specification such as to significantly affect product uniformity as determined by the Government.

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4.2.2 Inspections to be performed.-The sample will be subjected by the Government to any or all of the examination or tests specified in 4.3.2 and 4.4 of this specification.

4.2.3 Rejection.-If the sample fails to comply with the applicable requirement, the first article sample shall be rejected. The Government reserves the right to terminate its inspection upon any failure of the sample to comply with the stated requirement.

4.3 Inspection provisions

4.3.1 Lot formation.-The term "inspection lot" as used in this specification is defined as an essentially homogeneous collection of units of product from which a representative sample is drawn and inspected to determine conformance with applicable requirements. The sample selected shall represent only that quantity of units from which the sample was drawn and shall not be construed to represent any prior or subsequent quantities presented for inspection. Homogeneity shall be considered to exist provided the inspection lot has been produced by one manufacturer, in one unchanged process, using the same materials and methods, with the same specifications and same specification revisions and complies with the provisions for submission of product as specified in MIL-STD-105. Changes to the process, specifications, not affecting safety, performance, interchangeability, or storage, as determined by the Government, shall not be deemed to alter the homogeneity of an inspection lot. All material submitted for inspection in accordance with this specification shall comply with the homogeneity criteria specified herein regardless of the type of sampling procedure which is being applied to determine conformance with requirements.

4.3.2 Examination of the end item.-Examination of the end item shall be in accordance with 4.3.2.1 through 4.3.2.5.

4.3.2.1 Yard-by-yard examination.-Each roll in the sample shall be examined on the face side. When the total yardage in the roll does not exceed 100 yards, the entire yardage in the roll shall be examined. When the total yardage in the roll exceeds 100 yards, only the first 100 yards per roll shall be examined. The

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sample size shall be in accordance with the following:

<u>Lot size (yards)</u>	<u>Sample size (rolls) 1/</u>
3200 or less	8
3201 up to and including 10,000	13
10,000 and over	20

1/No more than one roll shall be taken from any shipping container, unless the number of shipping containers in the lot is less than the required number of rolls, in which case, all shipping containers shall be present in the sample. All defects as defined in Section III of FED-STD-4, which are clearly noticeable at normal inspection distances (3 feet) shall be scored and assigned demerit points as listed in 4.3.2.2. No linear yard (increments of 1 yard on the measuring device of the inspection machine) from any one roll within the sample shall be penalized more than 4 points. The lot shall be unacceptable if the points per 100 square yards of the total yardage examined exceeds 35 points. The lot shall be unacceptable if the points per 100 square yards of two or more individual rolls exceed 53.0 points. If one roll exceeds 45.0 points per 100 square yards, a second sample equal in size to the first sample shall be examined only for individual roll quality examination. The lot shall be unacceptable if one or more rolls in the second sample exceeds 45.0 points per 100 square yards. Point computation for lot quality and individual roll quality shall be as follows:

<u>Total points scored in sample X 3600</u>	=Points per 100
<u>Contracted width of cloth(inches) X total yards inspected</u>	square yards

4.3.2.2 Demerit points.-Demerit points shall be assigned as follows:

For defects up to and including 3 inches in any direction one point
 For defects exceeding 3 inches, but not exceeding 6 inches in any direction two points
 For defects exceeding 6 inches, but not exceeding 9 inches in any direction-three points
 For defects exceeding 9 inches in any direction four points



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The following defects, when present, shall be scored four points for each yard in which they occur:

- Hole, cut, tear or smash
- Overall uncleanness
- Objectional odor
- Cloudy, mottled or streaky

4.3.2.3 Examination for length

4.3.2.3.1 Individual roll.-During the yard-by-yard examination, each roll in the sample shall be examined for length. Any length found to be less than the minimum specified or more than two yards less than the length marked on the ticket shall be considered a defect with respect to length. The lot shall be unacceptable if two or more rolls in the sample are defective in respect to length.

4.3.2.3.2 Total yardage in sample.-The lot shall be unacceptable if the total of the actual lengths of the rolls in the sample is less than the total of the lengths marked on the tickets. The rolls examined shall be those selected for the examination of individual rolls.

4.3.2.4 Examination for shade.-During the yard-by-yard examination, each roll in the sample shall be examined for shade. Any roll in the sample offshade, shaded side to side, side to center or end to end shall be cause for rejection of the entire lot represented by the sample.

4.3.2.5 Examination for identification of pre-shrinkage process and non-compliance with Textile Fiber Products Identification Act.-During the yard-by-yard examination, each roll in the sample shall be examined for these defects. The lot shall be unacceptable if two or more rolls in the sample contain identification of the pre-shrinkage process by name or trademark on the cloth or ticket or are not labelled or ticketed in accordance with the Textile Fiber Products Identification Act.

4.4 Test Methods

4.4.1 Sampling.-One container (roll) shall be sampled from each lot. Five yards of material shall be subjected to the required inspections. No inspection shall be performed on the first five yards of material from the roll selected. If the sample fails to meet any fo the requirements, the lot shall be rejected.

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4.4.2 Width - Major defect - Code No. 01001.-The width of the acrylic cloth shall be determined as specified in FED-STD-191, Method 5020.

4.4.3 Weave - Major defect - Code No. 02001.-The weave shall be determined as specified in ASTM-D-123.

4.4.4 Weight - Major defect - Code No. 03001.-The weight shall be determined as specified in FED-STD-191, Method 5040.

4.4.5 Breaking strength - Major defect - Code No. 04001.-The breaking strength shall be determined as specified in FED-STD-191, Method 5100.

4.4.6 pH of water extract - Major defect - Code No. 05001.-The pH of the water extract shall be determined as specified in FED-STD-191, Method 2811.

4.4.7 Acidity or alkalinity - Major defect - Code No. 06001.-Decant the water extract obtained in the determination of pH into a 250 ml beaker forcing as much absorbed water as possible out of the cloth by pressing the cloth against the side of the beaker with the aid of a glass stirring rod. If the pH of the water extract is 7.0 or greater, titrate the solution with approximately 0.1N hydrochloric acid of known normality using methyl red as the indicator to a faint reddish tint.

Calculate any alkalinity to percent sodium carbonate as follows:

$$\text{Percent sodium carbonate} = \frac{5.3 \text{ VN}}{W}$$

Where:

V = ml of hydrochloric acid solution required
N = normality of the hydrochloric acid solution
W = Weight of sample

If the pH of the water extract is 6.9 or less, titrate the solution with approximately 0.1N sodium hydroxide solution of known normality using phenolphthalein indicator to the first permanent pink color. Calculate any acidity to percent acetic acid as follows:

$$\text{Percent of acetic acid} = \frac{6.0 \text{ VN}}{W}$$

Where:

V = ml of sodium hydroxide solution required
N = normality of sodium hydroxide solution
W = weight of sample

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4.4.8 Thread count - Major defect - Code No. 07001.-The thread count shall be determined as specified in FED-STD-191, Method 5050.

5. PREPARTION FOR DELIVERY

5.1 Level C-Packaging, packing and marking.-Packaging packing and marking shall be in accordance with PPP-P-1134.

6. NOTES

6.1 Ordering data.-Procurement documents should specify the following:

- a. Title, number and date of this document
- b. Data cards shall be prepared for each lot in accordance with MIL-STD-1167.
- c. Provisions for submission of first article samples

6.2 Inspection code numbers.-The five digit code numbers assigned to the inspection herein are to facilitate future data collection and analysis by the Government.

6.3 Class I and Class II acrylic cloth is not for use with propellants containing nitroguanidine.

6.4 The material requirement, as specified in 3.1, will be accepted on the basis of a supplier's certificate of compliance. However, if requested, standard industry methods should be performed to determine compliance with 3.1.

Custodian:
Army-MU

Preparing Activity:
Army-MU

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